

## **Montana Fish, Wildlife & Parks**

### **SPECIFICATIONS FOR WORK SPECIAL PROVISIONS**

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## 1. PROJECT DESCRIPTION

The Project involves construction work associated with:

**Indian Fort FAS 2019 Road & Bank Improvements  
Fish, Wildlife & Parks (FWP) project # 7173716  
Located in Stillwater County, MT**

The project generally includes rehabilitation of 647 lineal feet of access road servicing the Indian Fort Fishing Access Site near Reed Point, Montana. This work includes clearing and grubbing, installing one new 24" diameter culvert, placing 1100 cubic yards of rip-rap, installing and maintaining 550 lineal feet of turbidity curtain, constructing a drainage swale, excavation/embankment construction and grading of a new roadbed along with placement of a gravel base course 8" deep for road surfacing.

## 2. PROJECT RELATED CONTACTS

Project contacts are designated as follows:

**Owner:**

Montana FWP  
1420 E. Sixth Ave.  
PO Box 200701  
Helena, MT 59620-0701

**FWP Project Representative:**

Thomas M. Mannatt  
FWP Project Manager  
1522 9<sup>th</sup> Avenue  
Helena, MT 59620  
406-841-4006 (wk)  
406-431-4031 (cell)  
406-841-4004 (fax)

## 3. SITE INSPECTION

All Bidders should satisfy themselves as to the construction conditions by personal examination of the site described in this document. Bidders are encouraged to make any investigations necessary to assess the nature of the construction and the difficulties to be encountered, see General Conditions, Article 3.

## 4. SOILS INFORMATION

Geotechnical investigation work has not been done for this Project and is not a job requirement.

## 5. PROJECT REPRESENTATIVE, INSPECTIONS, AND TESTING

The Contractor's work will be periodically tested and observed to insure compliance with the Contract Documents. Complete payment will not be made until the Contractor has demonstrated that the work is complete and has been performed as required.

If the Project Representative detects a discrepancy between the work and the requirements of the Contract Documents at any time, up to and including final inspection, such work will not be completely paid for until the Contractor has corrected the deficiency, see General Conditions, Article 9.

The Project Representative will periodically monitor the construction of work to determine if the work is being performed in accordance with the contract requirements. The Project Representative does not have the authority or means to control the Contractor's methods of construction. It is, therefore, the Contractor's responsibility to utilize all methods, equipment, personnel, and other means necessary to assure that the work is installed in compliance with the Drawings and Specifications, and laws and regulations applicable to the work. Any discrepancies noted shall be brought to the Contractor's attention, who shall immediately correct the discrepancy. Failure of the Project Representative to detect a discrepancy will not relieve the Contractor of his ultimate responsibility to perform the work as required, see General Conditions, Article 3.

The Contractor shall inspect the work as it is being performed. Any deviation from the Contract requirements shall be immediately corrected. Prior to any scheduled observation by the Project Representative, the Contractor shall again inspect the work and certify to the Project Representative that he has inspected the work and it meets the requirements of the Contract Documents. The Project Representative may require uncovering of work to verify the work was installed according to the contract documents, see General Conditions, Article 12.

The work will be subject to review by the Project Representative. The results of all such observations, and all contract administration, shall be directed to the Contractor only through the Project Representative.

5.1 Services Required by the Contractor. The Contractor shall provide the following services:

- a. Any field surveys to establish locations, elevations, and alignments as stipulated on the Contract Documents. FWP reserves the right to set preliminary construction staking for the project. The Contractor is responsible to notify FWP for any construction staking discrepancies.
- b. Preparation and certification of all required shop drawings and submittals as described in the General Conditions, Article 3.
- c. All testing requiring the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to the Project Representative. The laboratory shall be staffed with experienced technicians properly equipped, and fully qualified to perform the tests in accordance with the specified standards.

- d. Preparation and submittal of a construction schedule, including submittals, see General Conditions, Article 3. The schedule shall be updated as required, as defined in the Contract Documents.
- e. All Quality Control testing as required by the Contractor's internal policies.
- f. All Quality Assurance testing and/or re-testing as stated in the Contract Documents, see General Conditions, Article 13.

5.2 Services Provided by the Owner. The Owner shall provide the following services at no cost to the Contractor except as required for retests as defined in the Contract Documents.

- a. The Project Representative may check compaction of backfill and surfacing courses using laboratory testing submittal information supplied by the Contractor. These tests are to determine if compaction requirements are being fulfilled in accordance with the Contract Documents. It is ultimately the responsibility of the Contractor to ensure that this level of compaction is constant and met in all locations.
- b. Any additional Quality Assurance testing deemed appropriate by the Owner, at the Owner's expense.

## 6. ENGINEERING INTERPRETATIONS

Timely Engineering decisions on construction activities or results have an important bearing on the Contractor's schedule. When engineering interpretation affects a plan design or specifications change, it should be realized that more than 24 hours may be required to gain the necessary Owner participation in the decision process including time for formal work directive or change order preparation as required.

## 7. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to the expiration of the warranty period, shall be removed and replaced with work or materials conforming to the provisions of the Contract Documents, see General Conditions, Article 12. Failure on the part of the Project Representative to condemn or reject bad or inferior work, or to note nonconforming materials or equipment on the Contractor's submittals, shall not be construed to imply acceptance of such work. The Owner shall reserve and retain all its rights and remedies at law against the Contractor and its Surety for correction of any and all latent defects discovered after the guarantee period (MCA 27-2-208). Only the Project Representative will have the authority to reject work which does not conform to the Contract Documents.

## 8. UTILITIES

The exact locations of existing utilities that may conflict with the work are not precisely known. It shall be the Contractor's responsibility to contact the owners of the respective utilities and arrange for field location services. **One Call Locators, 1-800-424-5555.** The Contract Documents may

show utility locations based on limited field observation and information provided to the Project Representative by others.

**The Project Representative cannot guarantee their accuracy.** The Contractor shall immediately notify the Project Representative of any discrepancies with utility locations as shown on the Contract Drawings and/or their bury depths that may in any way affect the intent of construction as scoped in these specifications. There will be no separate payment for exploratory excavation required to locate underground utilities.

- 8.1 Notification. The Contractor shall contact, in writing, all public and private utility companies that may have utilities encountered during excavation. The notification includes the following information:
- a. The nature of the work that the Contractor will be performing.
  - b. The time, date and location that the Contractor will be performing work that may conflict with the utility.
  - c. The nature of work that the utility will be required to perform such as moving a power pole, supporting a pole or underground cable, etc.
  - d. Requests for field location and identification of utilities.

A copy of the letter of notification shall be provided to the Project Representative. During the course of construction, the Contractor shall keep the utility companies notified of any change in schedule, or nature of work that differs from the original notification.

- 8.2 Identification. All utilities that may conflict with the work shall be the Contractor's responsibility to locate before any excavation is performed. Field markings provided by the utility companies shall be preserved by the Contractor until actual excavation commences. All utility locations on the Drawings should be considered approximate and should be verified in the field by the Contractor. The Contractor shall also be responsible for locating all utilities that are not located on the Drawings.

Utilities are depicted on the Contract Documents in accordance with their achieved "Quality Levels," as defined in the American Society of Civil Engineer's Document, ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data." Reliance upon these data for risk management purposes during bidding does not relieve the Contractor, or Utility Owner from following all applicable utility damage prevention statutes, policies, and/or procedures during construction. It is important that the Contractor investigates and understands the scope of work between the project Owner and Engineer regarding scope of limits of the utility investigations leading to these utility depictions. Definitions of Quality Levels are described as follows:

- a. "QUALITY LEVEL A" – (QLA): LOCATING THROUGH EXCAVATION. QLA data are highly accurate and are obtained by surveying an exposed utility. As such, both horizontal and vertical data are recorded. Survey accuracies are typically set at 15mm (1/2-inch) vertically, and to project survey standards horizontally (typically the same as for topography features), although these survey accuracies and precisions are generally left to the owner to specify in a scope of work. In addition to the applicable standard of care and any other additional standards imposed by commercial indemnity clauses, the accuracy of these location data is also typically guaranteed. Other data typically characterized include material type, surface elevation, utility size/capacity, outside dimensions, and configurations, soil type, and utility condition.
- b. "QUALITY LEVEL B" – (QLB): DESIGNATING. QLB information is obtained through the application of appropriate surface geophysical methods to identify the existence and approximate horizontal location of utilities (a utility's "designation") within the project limits, followed by survey, mapping, and professional review of that designation. Underground utilities are identified by interpretation of received signals generated either actively or passively, and through correlating these received signals with visible objects (QLC) and record data (QLD) to determine function. Designated utilities that can't be identified are labeled as "unknowns." Although approximate has no accuracy associated with it, generally the locations are within inches rather than feet. The more utility congested the area or the deeper the utilities, the less likely it is that the designations will achieve that accuracy. These designations are then surveyed to project accuracies and precisions, typically third-order accuracy similar to other topography features. Note that surveying existing one-call marks does not lead to QLB data, since the genesis of the marks was not under the direct responsible charge of the professional certifying the QLB depictions, and one-call generally does not address unknown utilities, privately owned utilities, utilities without records, abandoned utilities, and so on. Nor does the professional have knowledge of the field technician's qualifications, training, and level of effort.
- c. "QUALITY LEVEL C" – (QLC): SURFACE VISIBLE FEATURE SURVEY. QLC builds upon the QLD information by adding an independent detailed topography site survey for surface-visible appurtenances of subsurface utilities including but not limited to fire hydrants, valves, risers, and manholes. Professional judgment is used to correlate the QLD data to the surveyed features, thus increasing the reliability of both utility location and existence. It is a function of the professional to determine when records and features do not agree and resolve discrepancies. This may be accomplished by depiction of a utility line at quality level D, effectively bypassing or disregarding (but still depicting) a surveyed structure of unknown origin. Additional resolution may result from consultation with utility owners.

- d. "QUALITY LEVEL D" – (QLD): EXISTING RECORDS RESEARCH. QLD is the most basic level of information. Information is obtained from the review and documentation of existing utility records, verbal accounts, and/or one-call markings (to determine the existence of major active utilities and their approximate locations).
- 8.3 Removal or Relocation of Utilities. All electric power, street lighting, gas, telephone, and television utilities that require relocation will be the responsibility of the utility owner. A request for extending the specified contract time will be considered if utility owners cause delays.
- 8.4 Public Utilities. Water, sewer, storm drainage, and other utilities owned and operated by the public entities shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All such work shall be in accordance with these Contract Documents, or the Owner's Standard Specifications or written instructions when the work involved is not covered by these Specifications.
- 8.5 Other Utilities. Utilities owned and operated by private individuals, railroads, school districts, associations, or other entities not covered in these Special Provisions shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All work shall be in accordance with the utility owner's directions, or by methods recognized as being the standard of the industry when directions are not given by the owner of the utility.
- 8.6 Damage to Utilities and Private Property. The Contractor shall protect all utilities and private property and shall be solely responsible for any damage resulting from his construction activities. The Contractor shall hold the Owner and Project Representative harmless from all actions resulting from his failure to properly protect utilities and private property. All damage to utilities shall be repaired at the Contractor's expense to the full satisfaction of the owner of the damaged utility or property. The Contractor shall provide the Owner with a letter from the owner of the damaged utility or property stating that it has been repaired to the utility owner's full satisfaction.
- 8.7 Structures. The Contractor shall exercise every precaution to prevent damage to existing buildings or structures in the vicinity of his work. In the event of such damages, he shall repair them to the satisfaction of the owner of the damaged structure at no cost to the Owner.
- 8.8 Overhead Utilities. The Contractor shall use extreme caution to avoid a conflict, contact, or damage to overhead utilities, such as power lines, streetlights, telephone lines, television lines, poles, or other appurtenances during the course of construction of this project.

- 8.9 Buried Gas Lines. The Contractor shall provide some means of overhead support for buried gas lines exposed during trenching to prevent rupture in case of trench caving.
- 8.10 Pavement Removal. Where trench excavation or structure excavation requires the removal of curb and gutter, concrete sidewalks, or asphalt or concrete pavement, the pavement or concrete shall be cut in a straight line parallel to the edge of the excavation by use of a spade-bitted air hammer, concrete saw, colter wheel, or similar approved equipment to obtain a straight, square clean break. Pavement cuts shall be 2 feet wider than the actual trench opening.
- 8.11 Survey Markers and Monuments. The Contractor shall use every care and precaution to protect and not disturb any survey marker or monuments, such as those that might be located at lot or block corners, property pins, intersection of street monuments or addition line demarcation. Such protection includes markings with flagged high lath and close supervision. No monuments shall be disturbed without prior approval of the Project Representative. Any survey marker or monument disturbed by the Contractor during the construction of the project shall be replaced at no cost to the Owner by a licensed land surveyor.
- 8.12 Temporary Utilities. The Contractor shall provide all temporary electrical, lighting, telephone, heating, cooling, ventilating, water, sanitary, fire protection, and other utilities and services necessary for the performance of the work. All fees, charges, and other costs associated therewith shall be paid for by the Contractor.

## **9. CONSTRUCTION SAFETY**

The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees and subcontractors) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve them from compliance with the obligations and penalties set forth therein, see General Conditions, Article 10.

## **10. CONSTRUCTION LIMITS AND AREAS OF DISTURBANCE**

- 10.1 Construction Limits. Where construction easements or property lines, are not specifically called out on the Contract Documents, limit the construction disturbance to ten (10) feet, when measured from the edge of the slope stake grading, or to the adjacent property line, whichever is less. Disturbance and equipment access beyond this limit are not allowed without the written approval of both the Project Representative and the Owner of the affected property. If so approved, disturbance beyond construction limits shall meet all requirements imposed by the landowner; this includes existing roads used and/or improved



as well as the construction of new access roads. Special construction, reclamation, or post-construction reclamation or other closure provisions required by the landowner on access roads beyond the construction limits shall be performed by the Contractor at no additional cost to the Owner.

- 10.2 Areas of Disturbances. Approved areas of disturbance are those areas disturbed by construction activities within the construction limits and along designated or approved access routes. Such areas may require reclamation and revegetation operations, including grading to the original contours, top soiling with salvaged or imported topsoil, seeding, fertilizing, and mulching as specified herein. Other areas that are disturbed by the Contractor's activities outside of the limits noted above will be considered as site damage or unapproved areas of disturbance, see General Conditions, Articles 3 and 10. This includes areas selected by the Contractor outside the defined construction limits for mobilization, offices, equipment, or material storage.

## **11. DECONTAMINATE CONSTRUCTION EQUIPMENT**

Power wash all construction equipment entering the project site to prevent the spread of noxious weeds and aquatic invasive species. This applies to all FWP projects, whether or not individual construction permits specifically address cleaning of equipment.

## **12. TREE PROTECTION AND PRESERVATION**

The Contractor and the Owner shall individually inspect all trees within the project construction limits prior to construction. The Owner shall determine which trees are to be removed and which trees are to be preserved. Construction of the grading, utilities and various roadway facilities must not significantly damage the trees root system or hinder its chances for survival. Reasonable variations from the Contract Documents, as directed by the Project Representative, may be employed to ensure the survival of trees.

## **13. CONSTRUCTION SURVEYS**

The Contractor will be responsible for all layout and construction staking for the project. Dimensions and elevations indicated in layout of work shall be verified by the Contractor. Discrepancies between Drawings, Specifications, and existing conditions shall be referred to the Project Representative for adjustment before work is performed. Contractor shall be aware of property pins and survey monuments. Damage to these pins will require replacement of such by a registered land surveyor at no cost to the owner.

Original field notes, computations and other records take by the Contractor for the purpose of quantity and progress surveys shall be furnished promptly to the Project Representative and shall be used to the extent necessary in determining the proper amount of payment due to the Contractor.

## **14. MATERIAL SOURCES AND CONSTRUCTION WATER**

The Contractor shall be responsible for locating all necessary material sources, including aggregates, earthen borrow and water necessary to complete the work. The Contractor shall be responsible for Special Provisions

meeting all transportation and environmental regulations as well as paying any royalties. The Contractor shall provide the Project Representative with written approvals of landowners from whom materials are to be obtained, prior to approval.

The Contractor may use materials from any source, providing the materials have been tested through representative samples and will meet the Specifications.

Water for compaction efforts shall be supplied by the Contractor.

## **15. MATERIALS SALVAGE AND DISPOSAL**

Notify the Owner for any material salvaged from the project site not identified in the Contract Documents. The Owner reserves the right to maintain salvaged material at the project site, compensate the Contractor for relocation of salvaged material, or agreed compensation to Owner for material salvaged by the Contractor.

Haul and waste all waste material to a legal site and obey all state, county, and local disposal restrictions and regulations.

## **16. STORED MATERIALS**

Contractor shall use an approved storage area for materials. Materials and/or equipment purchased by the Contractor may be compensated on a monthly basis. For compensation, provide the Project Representative invoices for said materials, shop drawings and/or submittals for approval, and applicable insurance coverage, see General Conditions, Article 9.

## **17. STAGING AND STOCKPILING AREA**

Contractor shall use staging and stockpiling sites for to facilitate the project as approved by the Owner. Contract Documents may show approved staging and stockpiling locations. Notify Owner within 24 hours for approval of staging and stockpiling sites not shown on the Contract Drawings.

## **18. SECURITY**

The Contractor shall provide all security measures necessary to assure the protection of equipment, materials in storage, completed work, and the project in general.

## **19. CLEANUP**

Cleanup for each item of work shall be fully completed and accepted before the item is considered final. If the Contractor fails to perform cleanup within a timely manner the Owner reserves the right to withhold final payment.

Review these Contract Documents for additional Final Cleanup specifications for specific  
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measures, associated with Contractor responsibilities and final payment.

## **20. ACCESS DURING CONSTRUCTION**

Provide access to all public and private roadways and approaches within the project throughout the construction period.

## **21. CONSTRUCTION TRAFFIC CONTROL**

The Contractor is responsible for providing safe construction and work zones within the project limits by implementing the rules, regulations, and practices of the Manual on Uniform Traffic Control Devices, current edition.

## **22. SANITARY FACILITIES**

Provide on-site toilet facilities for employees of Contractor and Sub-Contractors and maintain in a sanitary condition.

## **23. CONTRACT CLOSEOUT**

The Contractor's Superintendent shall maintain at the project site, a "Record Set of Drawings" showing field changes, as-built elevations, unusual conditions encountered during construction, and such other data as required to provide the Owner with an accurate "as constructed" set of record drawings. The Contractor shall furnish the "Record Set" to the Project Representative following the Final Inspection of the Project.

The Contractor's final payment will not be processed until the "Record Set" of drawings are received and approved by the Project Representative.

## **24. MEASUREMENT AND PAYMENT**

Review these Contract Documents for additional Measurement and Payment specifications for definitions. Quantities are listed on the Bid Proposal for Payment Items. Additional material quantities, volumes, and measurements may be shown on the Contract Document drawings and/or specifications.

Unit Price quantities and measurements shown on the Bid Proposal are for bidding and contract purpose only. Quantities and measurements supplied, completed for the project, and verified by the Project Representative shall determine payment. Each unit price will be deemed to include an amount considered by the Contractor to be adequate to cover Contractor's overhead and profit for each bid item.

The Owner or Contractor may make a Claim for an adjustment in Contract Unit Price if the quantity of any item of Unit Price Work performed by the Contractor differs materially and/or significantly (increase or decrease by 50%) from the estimated quantity indicated on the Bid Proposal.

Lump sum bid item quantities will not be measured. Payment for these lump sums bid proposal  
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items will be paid in full amount listed on the Bid Proposal when accepted by the Project Representative, unless specified otherwise.

## **Montana Fish, Wildlife & Parks**

### **SPECIFICATIONS FOR WORK TECHNICAL PROVISIONS**

#### **Incorporation of Montana Public Works Technical Specifications.**

The Technical Specifications as found in Montana Public Works Standard Specifications (MPWSS), Sixth Edition, April 2010 and/or current Addendums or Revisions; are hereby incorporated by reference and made a part of this Contract:

#### **Incorporation of Montana Fish, Wildlife & Parks Technical Specifications and Modifications to MPWSS Technical Specifications.**

In addition to the MPWSS Technical Specifications are the following Montana Fish, Wildlife & Parks Technical Specifications (modifications to MPWSS Technical Specifications).

SECTION 01050 -	Field Engineering
SECTION 01450 -	Mobilization/Demobilization
SECTION 01750 -	Final Cleanup
SECTION 01800 -	Erosion and Sediment Control
SECTION 01801 -	Turbidity Curtain
SECTION 02230 -	Street Excavation, Backfill, and Compaction
SECTION 02235 -	Crushed Base Course
SECTION 02240 -	Rip Rap
SECTION 02725 -	Drainage Culverts
SECTION 02910 -	Revegetation

## **SECTION 01050**

### **FIELD ENGINEERING**

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

#### **PART 3 EXECUTION**

##### **1.1 CONSTRUCTION SURVEY**

- A. Engineer will provide survey control (northing/easting), benchmarks(vertical datum), and grade stakes for all designed alignments and profiles, as shown on the project Plans. Engineer will provide one set of stakes prior to the construction of the various project elements. The contractor shall notify the Engineer 72 hours in advance that the site has been prepared and staking is needed to start construction.
- B. Contractor shall perform all additional surveying, staking, recording of data, and calculations as necessary to construct the project from the initial layout to final completion. Reset stakes as many times as necessary to construct the work.
- C. The Engineer will set center alignment stakes and key geometric points and described above in item A. The contractor set reference stakes, based the Engineer's stakes, at 50' intervals on tangent sections and at 25' on horizontal curves or as necessary to construct the work. Additionally, the Contractor shall set reference/slope stakes at PC and PT locations as well as the begin and end of project stationing. Limit grade stake tolerances to +/-0.1'.

#### **PART 4 MEASUREMENT AND PAYMENT**

Add the following:

- A. Construction Surveying is incidental to the work and no separate payment is made for this item.

**END OF SECTION 01050**

## **SECTION 01450**

### **MOBILIZATION/DEMOBILIZATION**

Added Section.

#### **PART 1                    GENERAL**

##### **1.1      DESCRIPTION**

- A. This item shall consist of the preparatory work and operations necessary performed by the Contractor for the movement of personnel, equipment, supplies, and incidentals to and from the work site. The work includes those actions necessary for obtaining necessary permits required for mobilization; for the establishment of all offices and facilities necessary to work on the project; for premiums on contract bonds; for insurance for the contract; and for other work on the various items on the project site. Mobilization costs for subcontracted work shall be considered to be included.
- B. Contractor's cost for administration, bonding, insurance, and site documents shall be included in mobilization and shall not be paid as a separate item.
- C. All equipment moved to the project sites shall be in good mechanical condition and free of fuel, oil, lubrication, or other fuel leaks. The Contractor shall immediately remove any equipment potentially or actually discharging environmentally damaging fluids.
- D. All equipment moved to the project sites shall be thoroughly cleaned before it is brought to the sites to prevent the introduction of weed seeds. Equipment removed from the sites may not be returned to the sites again until it is thoroughly cleaned again.

#### **PART 2                    PRODUCTS – NOT USED**

#### **PART 3                    EXECUTION – NOT USED**

#### **PART 4                    MEASUREMENT AND PAYMENT**

##### **4.1      MEASUREMENT**

- A. There will be no direct measurement of this item.

##### **4.2      PAYMENT**

- B. Partial payments for mobilization/demobilization will be made based on the lump sum bid price as follows:

- 25% of the amount bid for mobilization/demobilization when the Contractor has moved on-site and begun construction activities.
- 50% of the amount bid for mobilization/demobilization when 25% of the contract amount (exclusive mobilization/demobilization) has been completed.
- 75% of the amount bid for mobilization/demobilization when 50% of the contract amount (exclusive mobilization/demobilization) has been completed.
- 100% of the amount bid for mobilization/demobilization when 75% of the contract amount (exclusive mobilization/demobilization) has been completed.

**END OF SECTION 01450**



## **SECTION 01750**

### **FINAL CLEANUP**

Added Section.

#### **PART 1                    GENERAL**

##### **1.1      DESCRIPTION**

- A.      This work consists of final cleanup of the project site prior to final acceptance.

#### **PART 2                    PRODUCTS – NOT USED**

#### **PART 3                    EXECUTION**

##### **3.1      CONTRACTOR RESPONSIBILITIES**

The contractor shall be responsible for final clean up at the end of the project to a level satisfactory to the owner. All construction debris, no matter how small, shall be collected and removed from the site. All wheel ruts shall be filled in and be leveled to match the adjacent grade and material. Re-seeding or re-sodding, or other re-surfacing may be necessary to repair any construction related impacts or damage.

All survey markings set as control points and boundary corners shall not be disturbed. If the contractor encounters a control point or boundary corner and it is in the way of construction it shall be brought to the attention of the FWP project representative so that it can be avoided or properly preserved. The Project surveyor shall identify control points, whenever possible, with a marking/point to be saved.

All final slopes shall be dressed manually to remove woody debris, accumulated trash and oversized material. Any new slope or topsoil surfaces shall be hand raked to provide a uniform appearance. The contractor shall dress all gravel, pavement and concrete edges to eliminate abrupt edges and provide a smooth transition. All construction related temporary sediment control devices shall be removed as soon as practical.

#### **PART 4                    MEASUREMENT AND PAYMENT**

##### **4.1      PAYMENT**

Unless specifically noted otherwise, all final cleanup work shall be incidental to other work items in the contract and no separate payment shall be made.

**END OF SECTION 01750**

## SECTION 01800

### EROSION AND SEDIMENT CONTROL

Added Section.

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. This work consists of furnishing, constructing, and maintaining permanent and temporary erosion control and sediment control measures as shown on the project drawings and/or project related construction permits.

#### PART 2 PRODUCTS

##### 2.1 GENERAL

- A. Temporary and erosion control products utilized include but are not limited to backfill material; berms; brush barriers; erosion control blankets, bales, wattles, logs, rolls; erosion control culvert pipe; detention basins; fertilizer; geotextile; mulch; plastic lining; riprap; sandbags; seed; silt fence; and water.

##### 2.2 EROSION CONTROL WATTLES

- A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *Sediment Stop*, manufactured by *North American Green*, or approved equal.

##### 2.2 EROSION CONTROL BLANKETS

- A. Where designated, provide a sediment retention product made from straw and coconut fiber reinforced with a 100% bio-degradable netting. Use wood stakes to secure sediment retention product in place, spacing per the manufacturer's recommendations. An acceptable product is *BioNet® S150BN™*, manufactured by *North American Green*, or approved equal.

##### 2.3 SILT FENCE

- A. Where designated, provide silt fencing in accordance with Section 01802 Silt Fence of these specifications.

## **PART 3                      EXECUTION**

### **3.1      INSTALLATION**

- A. Provide permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, environmental permits, and as directed by the Project Representative. These erosion control measures shall be designed, implemented, and maintained by the Contractor in accordance with Best Management Practices (BMPs) to control erosion and sediment release from the work site.
- B. Install permanent and temporary erosion control measures according to the Storm Water Pollution Prevention Plan (SWPPP), if applicable, approved construction permits, and erosion control drawings.
- C. When erosion control measures are not functioning as intended, immediately take corrective action.

## **PART 4                      MEASUREMENT AND PAYMENT**

### **4.1      MEASUREMENT AND PAYMENT**

- A. All items in this section are incidental to the work and no separate payment is made for these items.

**END OF SECTION 01800**

## SECTION 01801

### FLOATING TURBIDITY CURTAIN

Added Section.

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

- A. This work consists of furnishing and installing a floating turbidity curtain to control sedimentation and suspended solids during underwater construction methods.

#### PART 2 PRODUCTS

##### 2.1 GENERAL

- A. Provide a turbidity curtain with a geotextile material curtain, floatation boom, and anchorage system.
- B. Provide a woven geotextile material as approved for turbidity containment by manufacture's recommendations.
- C. An acceptable floating turbidity curtain product is *Layfield Turbidity Curtain Type 2.dot*, *Aer-Flo Inc.*, *Tough Guy Floating Turbidity Barrier Type 2.dot* or approved equal. Contact [www.layfield.com](http://www.layfield.com), (800) 796-6868 for Layfield products and (701) 222-3010 for Aer-Flo products.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Install turbidity curtain parallel to the shoreline around the construction area of disturbance. Turbidity curtain installation is required prior to any and all work below the ordinary high water mark.
- B. Extend the turbidity curtain to the lake or river bottom at all installation locations.
- C. Provide flexible flotation buoys for the top of the turbidity curtain.
- D. Provide an anchorage system consisting of load lines attached to the bottom of the turbidity curtain. Place anchors every 50' connected to the top of the floatation buoy.

- E. Inspect the turbidity curtain daily to ensure sedimentation is controlled and proper function of the erosion control BMP. Immediately correct turbidity curtain deficiencies before continuing with work. If turbidity curtain deficiencies are not corrected, the Contractor may be in violation with approved construction permits and may be issued a stop work order by the Project Represent
- F. Maintain turbidity curtain throughout all work activities until removal approval by the Project Representative. Allow sediment to settle or disperse for 12 hours after construction disturbance prior to removal.

## **PART 4                      MEASUREMENT AND PAYMENT**

### **4.1      GENERAL**

- A. Turbidity curtain will be measured and paid per lineal foot (LF) including all labor, equipment, materials, and incidentals required for the completion of the work.

**END OF SECTION 01801**

## SECTION 02230

### STREET EXCAVATION, BACKFILL AND COMPACTION

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

#### **PART 1 GENERAL**

##### **1.3 DENSITY CONTROL TESTING**

###### **A. FIELD DENSITY TESTING**

Delete this section and add the following:

In-place field density tests for quality assurance are at Contractors expense meeting AASHTO T238 (ASTM D2922) and AASHTO T239 (ASTM D3017), Nuclear Densometer Methods. Quality assurance field density testing frequency is once per compacted lift, or as directed by Engineer.

Retesting of failing areas is at the expense of the Contractor.

###### **B. LABORATORY MAXIMUM DENSITY and OPTIMUM MOISTURE**

Delete this section and add the following:

Quality assurance tests will be made by the Contractors independent testing laboratory for each on-site natural soil or each source of off-site material, including borrow material, to determine the laboratory maximum density values and optimum compaction moisture content under AASHTO T99 or ASTM D698.

#### **PART 3 EXECUTION**

##### **3.1 CLEARING AND GRUBBING**

Add the following:

Obtain necessary burning permits if cleared and grubbed material is burned on site. All stumps within construction limits shall be grubbed under this contract.

During the clearing and grubbing portion of the work the contractor shall stock pile sufficient desirable topsoil material for constructing the proposed landscape mounds as shown on the Plans.

### 3.4 EXCAVATION

Add the following:

Sheeting, Shoring, and Bracing: Except where trench banks are cut back on a stable slope, provide and maintain all sheeting, shoring, and bracing necessary to protect workers, and to protect adjoining grades and structures from caving, sliding, erosion or other damage in accordance with Occupational Safety and Health Standards (29 CFR Part 1926 – Construction Standards for Excavations), the Site Specific Health and Safety Plan, and other applicable codes and governing authorities.

## **PART 4 MEASUREMENT AND PAYMENT**

### 4.1 METHOD OF MEASUREMENT AND PAYMENT

Delete this section and add the following:

#### A. CLEARING AND GRUBBING

1. Clearing and grubbing will not be measured for payment and is considered incidental to other work items in this Contract.

#### B. EXCAVATION AND EMBANKMENT

Excavation and embankment will be measured and paid for by:

- 1) the lineal foot (LF) of swale
- 2) and lump sum for roadway shown on the plans.

**END OF SECTION 02230**

## SECTION 02235

### CRUSHED BASE COURSE

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

#### PART 2 PRODUCTS

##### 2.3 GRADATION

Add the following to Section 2.3:

- F. The Contractor shall use 1-1/2 minus Crushed Base Course Material as specified in Section 02235 - Crushed Base Course for all material called out on the Plans as “Crushed Base Course”. Testing of this material shall be provided if called for by the Engineer to show that this material meets this specification.

#### PART 3 EXECUTION

##### 3.3 FIELD DENSITY REQUIREMENTS

Add the following:

- D. The Contractor is responsible for providing all compaction testing by an independent testing agency.
- E. Compaction testing locations and frequency will be performed as follows:

Compaction Testing	Location*	Frequency
Subgrade and Subbase	New Access Road	4
Crushed Base Course	New Access Road	4

\* Station/Offset determined by Engineer

\*\*Proof roll subgrade only for observation by Engineer prior to base course placement.

#### PART 4 MEASUREMENT AND PAYMENT

##### 4.1 METHOD OF MEASUREMENT AND PAYMENT

Crushed base course will be measured and paid for on a per cubic yard basis.

**END OF SECTION 02235**



## SECTION 02242

### RIP-RAP

#### Added Section.

#### **PART 1 GENERAL**

##### 1.1 DESCRIPTION

- A. This work shall consist of the construction of loose rock rip-rap revetments and blankets, including filter layers or bedding where specified.

#### **PART 2 PRODUCTS**

##### 2.1 ROCK

###### A. General

Rock for rock rip-rap shall be obtained from designated sources or, shall conform to the following specifications:

Individual rock fragments shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. The rock fragments shall be angular to sub-rounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

Unless otherwise specified and except as provided below, the rock shall have the following properties:

- a. Bulk specific gravity (saturated surface-dry basis) not less than 2.4.
- b. Absorption not more than 4 percent maximum.
- c. Soundness: Weight loss in 5 cycles not more than 10 percent when sodium sulfate and 15 percent when magnesium sulfate is used.

The bulk specific gravity and absorption shall be determined by ASTM Method C 127. The soundness shall be performed by ASTM Method C 88 for coarse aggregate modified as follows:

The test sample shall not be separated into fractions. It shall consist of 5000 + 300 grams of rock fragments, reasonably uniform in size and shape and weighing approximately 100 grams each, obtained by breaking the rock and selecting fragments of the required size.

After the sample has been dried, following completion of the final test cycle and washing to remove the sodium sulfate or magnesium sulfate, the loss of weight shall be determined by subtracting from the original weight of the sample the final weight of all fragments which have not been broken into three or more pieces.

The report shall show the percentage loss of weight and the results of the qualitative examination.

Rock that fails to meet the requirements stated in a, b, and c above, may be accepted only if similar rock from the same source has been demonstrated to be sound after five years of service under conditions of weather, wetting and drying, icing, and erosive forces similar to those anticipated for the rock to be installed under this specification.

#### B. Grading

The rock shall conform to the specified grading limits after it has been placed in the riprap.

The rock shall be free from dirt, clay, sand rock fines and other materials not meeting the required gradation limits.

At least 30 days prior to the delivery of rock from other than designated sources, the Contractor shall designate in writing the source from which they intend to obtain the rock. The Contractor will also provide satisfactory documentation to the technician that the material meets the requirements of the specification. The Contractor shall provide the technician free access to the source for obtaining samples for testing. The size and grading of the rock shall be as specified in the special provisions.

Rock from the designated sources shall be excavated, selected and processed as necessary to meet the quality and grading requirements in the special provisions. The rock shall conform to the specified grading when installed as Class I or Class III riprap.

#### **Class I Rip-Rap Gradation**

<b>Size</b>	<b>% Passing</b>
12 inch	100
9 inch	60-100
6 inch	30-50
3 inch	10-35
1.5 inch	0-25

### Class III Random Rip-Rap Gradation

Weight of Stone	Equivalent Sphere Diameter <sup>1</sup>	% of Total WT That Must Be Smaller Than Given Size
2100 pounds	4.0 feet	60-100
700 pounds	2.00 feet	20-40
40 pounds	0.77 feet	0-10

Notes:

1. Based on unit weight of 165 pounds per cubic foot (2,675 kg/cubic meter)

#### 2.2 FILTER AND BEDDING MATERIALS

When required, granular filter and bedding materials shall, unless otherwise specified, conform to Montana Construction Specification MT-117, Drainfill and Filters.

### PART 3 EXECUTION

#### 3.1 GENERAL

- A. Furnish hard, durable, and angular in shape rock that is resistant to weathering and water action and free from overburden, spoil, and organic or other unsuitable material. During the excavation process, Do not use rounded stone or boulders from a streambed source as riprap. Angular faces of stone shall inter-lock to provide a stable surface.

#### 3.2 SUBSURFACE PREPARATION

The subgrade surfaces on which the riprap or bedding course is to be placed shall be cut or filled and graded to the lines and grades shown on the drawings. When fill to subgrade lines is required, it shall consist of approved materials and shall conform to the requirements of the specified class of fill.

Riprap shall not be placed until the foundation preparation is completed and the subgrade surfaces have been inspected and approved by the Technician.

#### 3.3 EQUIPMENT – PLACED ROCK RIPRAP

The rock shall be placed by equipment on the surfaces and to the depths specified. The riprap shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials. The rock shall be delivered and placed in a manner that will insure that the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks.

Riprap shall be placed in a manner to prevent damage to structures. Hand placing will be required to the extent necessary to prevent damage to the permanent works.

### 3.4 HAND – PLACED RIPRAP

The rock shall be placed by hand on the surfaces and to the depths specified. It shall be securely bedded with the larger rocks firmly in contact one to another. Spaces between the larger rocks shall be filled with smaller rocks and spalls. Smaller rocks shall not be grouped as a substitute for larger rock. Flat slab rock shall be laid on edge.

### 3.4 FILTER LAYERS OR BEDDING

When filter layers or bedding beneath riprap is specified, the filter or bedding material shall be spread uniformly on the prepared subgrade surfaces to the depth specified. Compaction of filter layers or bedding will not be required, but the surface of such layers shall be finished reasonably free of mounds, dips or windrows.

When a geotextile filter is specified, the material used shall be non-woven and meet the requirements as outlined in Table 1. Geotextile shall be joined by over-lapping a minimum distance of 18 inches. Anchoring of the fabric is not required but care shall be taken to minimize displacement.

Rock riprap shall not be dropped from a height greater than three feet on geotextile.

Sufficient hand work shall be done to produce a dense section with a neat and uniform surface.

TABLE 1. REQUIREMENTS FOR NONWOVEN GEOTEXTILES

PROPERTY	TEST METHOD	Class I	Class II
Weight - Typical	ASTM D-5261	8.0 oz/sy	10 oz/sy
Tensile Strength	ASTM D-4632	205 lbs	230 lbs
Elongation @ Break	ASTM D-4632	50%	50%
Mullen Burst*	ASTM D-3786*	350 psi	500 psi
Puncture Strength*	ASTM D-4833*	110 lbs	120 lbs
CBR Puncture	ASTM D-6241	500 lbs	700 lbs
Trapezoidal Tear	ASTM D-4533	80 lbs	95 lbs
Apparent Opening Size	ASTM D-4751	80 US Sieve	100 US Sieve
Permittivity	ASTM D-4491	1.35 Sec-1	1.2 Sec-1
Water Flow Rate	ASTM D-4491	90 g/min/sf	80 g/min/sf
UV Resistance @ 500 Hours	ASTM D-4355	70%	70%

\*Historical averages ( current values not available): Mullen Burst Strength ASTM D-3786 is no longer recognized by ASTM D-35 on Geo-synthetics as an acceptable test method. Puncture Strength ASTM D-4833 is not recognized by AASHTO M288 and has been replaced with CBR Puncture ASTM D-6241.

Use Class I for  $d_{50} \leq 15''$

Use Class II for  $d_{50} \geq 16''$

## **PART 4 MEASUREMENT AND PAYMENT**

### **4.1 PAYMENT**

Measurement and payment will be made to the nearest cubic yard and will be based on the neat Lines shown on the drawings.

Such payment will constitute full compensation for all materials, labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Compensation for geotextile or any other item of work shown on the drawings or described in the special provisions but not listed on the bid schedule will be considered incidental to and included in the pay items listed on the bid schedule.

## **PART 5 SUBMITTALS REQUIRED**

- Geotextiles
- The Contractor shall designate in writing the source from which they intend to obtain the rock.
- When other than pre-approved rock sources are selected for use, site specific test results shall be submitted demonstrating compliance with Section 2 of this specification.

Submittals are to be received by the Contracting Officer a minimum of 15 days prior to the start of placing rock material.

**END OF SECTION 02241**

## SECTION 02725

### DRAINAGE CULVERTS

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

#### PART 2 PRODUCTS

##### 2.2 PIPE MATERIALS

###### D. Other Pipe Material

Add the following:

Furnish pre-fabricated, high-density polyethylene (HDPE) pipe and manifold bends that provide water tight joints per the diameters designated on the project drawings or as directed by the Project Representative. HDPE pipe shall have a smooth interior and annular exterior corrugations and shall meet the following requirements:

- 4- through 10-inch (100 to 250 mm) shall meet AASHTO M252, Type S
- 12- through 60-inch (300 to 1500 mm) shall meet AASHTO M294, Type S or ASTM F2306

An acceptable HDPE pipe product is manufactured by the following supplier:

N-12 WT IB (or approved equal)  
Advantage Drainage System  
4640 Trueman Blvd.  
Hilliard, OH 43026  
1-800-821-6710  
www.ads-pipe.com

Furnish all fittings of the same material. Follow the manufacture's recommendations for installation procedures.

All specifications included in Section 2.2.C.1 of the MPWSS shall be in addition to the above specification for HDPE pipe.

#### PART 4 MEASUREMENT AND PAYMENT

Add the following:

##### 4.6 DRAINAGE PIPE

- A. 24" diameter HDPE Drainage Pipe Installation will be measured and paid on a per lineal foot basis, including all labor, equipment, materials and incidentals required for the completion of the work. The total length of pipe installed at each location shall be as shown on the plans.

**END OF SECTION 02725**

## SECTION 02910

### REVEGETATION

All applicable portions of this specification section in the MPWSS shall apply with the following additions, deletions and/or modifications.

#### PART 1 GENERAL

##### 1.1 DESCRIPTION

Add following:

This work also includes conserving, placing, and finishing topsoil placement at designated areas on the project drawings or as directed by the Engineer.

#### PART 2 PRODUCTS

##### 2.1 SEED

Add the following:

Utilize the following seed mix for all areas to be seeded.

Seed Name	% Pure Live Seed	Lbs. Per Acre
Western Wheatgrass	30	*
Bluebunch Wheatgrass	20	*
Hard Fescue	20	*
Slender Wheatgrass	15	*
Green Needlegrass	15	*

\* Drilled Rate = 25 lbs/acre, Broadcast and Hydroseed Rate = 50 lbs/acre

##### 2.2 TOPSOIL

Add the following:

Utilize all salvaged topsoil conserved from clearing and grubbing operations to cover excavation and embankment slopes prior to fertilizing, seeding, or mulching.

##### 2.4 FERTILIZER

Delete this Section.

## **PART 4      MEASUREMENT AND PAYMENT**

### **4.1      GENERAL**

Delete this section and add the following:

- A.      Unless specified otherwise, all revegetation work shall be incidental to other work items in the contract and no separate payment shall be made.
- B.      Placing conserved topsoil will not be measured for payment and is considered incidental to other work items in this Contract.

**END OF SECTION 02910**